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IS 9031 (1992): Teleprinter Paper Page Rolls [LITD 7:  
Audio, Video and Multimedia Systems and Equipment]



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भारतीय मानक  
टेलिप्रिन्टर पेपर पेज रोल — विशिष्टि  
( पहला पुनरीक्षण )  
*Indian Standard*  
TELEPRINTER PAPER PAGE  
ROLLS — SPECIFICATION  
( *First Revision* )

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BUREAU OF INDIAN STANDARDS  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

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Price Group 2

## FOREWORD

This Indian Standard ( First Revision ) was adopted by the Bureau of Indian Standards, after the draft finalized by the Radio Communications Sectional Committee had been approved by the Electronics and Telecommunication Division Council.

The object of the standard is to specify the detail requirements of the teleprinter paper page rolls ( single, two, three and four ply ). It is anticipated that adoption of this standard will ensure uniformity in production and guide the manufacturers.

Teleprinter paper page roll is a continuous length of plain paper in roll form for use with page type teleprinters ( friction type ). The roll may consist of single ply or more than one ply ( for example, two, three or four ) for use with carbon sheet interleaved to give an original and carbon copies.

This standard was originally published in 1979. It is being revised in the light of experience gained in the use of this standard and the subsequent amendments.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values ( *revised* )'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

**AMENDMENT NO. 1   MAY 2004**  
**TO**  
**IS 9031 : 1992   TELEPRINTER PAPER PAGE ROLLS —**  
**SPECIFICATION**  
**( *First Revision* )**

( *Page 1, clause 4.1* ) — Substitute 'IS 1848 : 1991' for 'IS 1648 : 1981'.

( *Page 4, Annex A* ) — Substitute 'IS 1848 : 1991 Writing and printing paper ( *third revision* )' for 'IS 1648 : 1981 Code of practice for the safety of building (general) fire fighting equipment and its maintenance'.

( LTD 20 )

Reprography Unit, BIS, New Delhi, India

# Indian Standard

## TELEPRINTER PAPER PAGE ROLLS — SPECIFICATION

### ( First Revision )

#### 1 SCOPE

1.1 This standard covers the dimensions and other functional requirements of the teleprinter paper page rolls for use with page type teleprinters ( friction type ).

#### 2 REFERENCES

2.1 The Indian Standards listed in Annex A are necessary adjuncts to this standard.

#### 3 TERMINOLOGY

3.0 For the purpose of this standard, the following definitions shall apply.

##### 3.1 Teleprinter Paper Page Roll

A continuous length of plain paper in a roll form for use with page type teleprinters.

##### 3.2 Type Tests

Tests carried out to prove conformity with the requirements of this standard. These are intended to prove the general qualities and design of a given type of teleprinter paper page roll.

##### 3.3 Acceptance Tests

Tests carried out on samples selected from a lot for the purpose of verifying the acceptability of the lot.

###### 3.3.1 Lot

All teleprinter page rolls of the same type manufactured by the same factory during the same period, using the same process and materials.

##### 3.4 Routine Tests

Tests carried out on each teleprinter paper page roll to check the essential requirements which are likely to vary during production.

#### 4 MATERIAL AND CONSTRUCTION

4.1 The quality of paper shall conform to the requirements of white printing paper of nominal mass  $60\text{g/m}^2$  as prescribed in IS 1648 : 1981.

The thickness of paper shall be not less than 0.08 mm and not more than 0.11 mm.

#### 4.2 Carbon Paper ( for Use with 2, 3 and 4-Ply Rolls )

- |                 |   |
|-----------------|---|
| a) Base paper   | As per Type A of IS 9055 : 1979   |
| b) Coated paper | 1) The base paper [ see 4.2 ( a ) ] shall be coated on one side with suitable carbon ink necessary to give the required manifolding characteristics. The coating shall be smooth, uniform and free from smudginess and tendency to separate as flakes when used |
|                 | 2) Mass of coating shall be $6 \pm 1 \text{ g/m}^2$   |
|                 | 3) Manifolding characteristic ( minimum number of legible carbon copies ) = 3   |
|                 | 4) Overall width of the carbon paper shall be the same as the width of the printing white paper but with an uncoated margin of 5 to 8 mm on both edges  |

NOTE—The printing white paper and the carbon paper shall comply with the requirements given above when tested in accordance with the relevant test methods prescribed in IS 1060 ( Part 1 ) : 1966, IS 1060 ( Part 2 ) : 1960 and IS 9055 : 1979.

#### 4.3 Teleprinter Paper Page Rolls

The teleprinter page rolls, single, two, three, four and five ply should be in 1, 2, 3, 4 and 5 continuous layers respectively of printing white paper, in roll form wound on a central core for use on teleprinter. In case of 2, 3, 4 and 5-ply roll the printing white paper layers shall be interleaved respectively with 1, 2, 3 and 4 layers of carbon paper with the coated surface of carbon paper facing the central core, in a manner that each layer of carbon paper lies in between 2 layers of printing white paper with a view to obtain one original and 1, 2, 3 and 4 copies respectively.

**4.3.1** Each roll of paper shall be of homogeneous composition, free from joints, tears waves, flakes or any other visual defects.

#### 4.4 Construction

##### 4.4.1 Reeling

Paper/layers of paper shall be tightly and evenly wound on the central core in a manner that each of the edges of the roll lies in one place and also in a manner so that the paper unwinds freely without sticking. The ends of the roll shall be parallel and uniform in diameter. The inner end of the roll of paper shall be secured to the central core by adhesive strip or glue. The outer end of the roll shall also be secured by adhesive strip so that the paper roll does not get unwound.

##### 4.4.2 Centre Core

The centre core shall be uniformly made of tubular construction and shall have sufficient strength. The material from which the centre core is made of, shall be pressed paper board, card board or any other suitable strong and durable material.

**4.4.3** The working surface of the core end of paper shall be marked with a pink or red warning mark having a width not less than 3 mm and not more than 10 mm. The length of this mark shall be 1.5 meters to 2.5 meters and there may be an unmarked length not exceeding 0.5 meters from the inner end of the roll.

##### 4.4.4 Protection of Centre Core

The centre core of each roll of paper shall be fitted with rigid plastic plugs at each end to prevent any damage to the centre core in handling or in transit. The plugs shall be a close fit (see Note) in the centre core and shall be provided with a thin collar and shall have a central hole so that the plugs may be conveniently removed from the central core when the rolls are required to be put in use. The length of the plug inside the core shall be at least 15 mm.

NOTE — The plastic end plugs shall not fall out during normal handling of the paper rolls.

#### 5 DIMENSIONS

**5.1** The teleprinter paper page rolls shall comply with the dimensions given below:

##### a) Paper Roll

- |                   |                          |
|-------------------|--------------------------|
| i) Outer diameter | 80 ± 1 mm,<br>115 ± 1 mm |
|-------------------|--------------------------|

- |                             |               |
|-----------------------------|---------------|
| ii) Width of the paper/roll | 208 to 210 mm |
|-----------------------------|---------------|

##### b) Centre Core

- |                              |                                |
|------------------------------|--------------------------------|
| i) Thickness of the material | 3.0 ± 0.5 mm                   |
| ii) Inner diameter           | 25 to 27 mm                    |
| iii) Length                  | Same as the width of the paper |

#### 6 MARKING

**6.1** The following information shall be marked on each roll of paper in the order given below:

- Outer diameter,
- Width,
- Number of plies,
- Manufacturer's name or designation or trade-mark,
- Date code, and

NOTE — Reference may be made to IS 8186 : 1976.

- Any other marking as agreed between the manufacturer and the purchaser.

**6.1.1** Additional marking, if any, shall be so applied as not to cause confusion with the marking specified in 6.1 and has to be separated from them.

**6.1.2** Each carton containing the paper roll shall be marked with all the information specified in 6.1 in addition to the following:

- The description of the contents and the number of rolls contained in the carton, and
- Country of manufacture.

**6.1.3** Teleprinter page roll or its carbon may also carry the BIS Standard Mark.

#### 7 PACKING

**7.1** Each roll of paper shall be individually wrapped with good quality strong and durable Kraft paper (see IS 1397 : 1967) or kept in a sealed polythene envelope in a manner to prevent any damage to the teleprinter rolls inside.

**7.1.1** The rolls shall be packed in cartons, and each carton shall contain 10 rolls of paper. Each carton shall be sealed with gummed tape (Kraft paper). Additional details for packing shall be agreed between the user and the manufacturer.



## 8 TESTS

### 8.1 Classification of Tests

#### 8.1.1 Type Tests

The following shall constitute type test:

- a) Visual examination,
- b) Dimension
- c) Quality of paper ( *see* 4.1 )
- d) Quality of carbon paper [ *see* 4.2 (a) and (b) ], and
- e) Climatic tests.

##### 8.1.1.1 Number of samples

Five sample rolls of paper of each type shall be supplied for carrying out type tests in accordance with this standard.

##### 8.1.1.2 Criteria for approval

There shall be no single failure in any of the test.

### 8.1.2 Acceptance Tests

The following shall constitute the acceptance tests:

- a) Visual examination,
- b) Dimensions,
- c) Quality of paper ( *see* 4.1 ), and
- d) Climatic tests ( except cold ).

8.1.2.1 A recommended sampling plan and acceptance criteria are given in Annex B.

#### 8.1.3 Routine Tests

The following shall constitute the routine tests:

- a) Visual examination, and
- b) Dimensions.

### 8.2 General Conditions for Tests

The test shall be carried out under the prevailing ambient atmospheric conditions.

### 8.3 Visual Examination

Each paper roll shall be visually examined and checked for relevant requirements specified in this standard.

### 8.4 Dimensions

The paper roll and the centre core shall be checked for the dimensions specified in this standard.

### 8.5 Climatic Tests

The paper rolls shall be subjected in the climatic tests given in Table 1 in accordance with sequence specified therein.

8.5.1 At the end of the climatic sequence the paper roll shall be subjected to the recovery under standard atmospheric conditions of  $27 \pm 2^\circ\text{C}$  and  $65 \pm 2$  percent RH for testing for a period of 2 hours.

8.5.2 The samples shall withstand the climatic tests without obvious detriment and shall manifold satisfactorily as per the standard at the end of each of the climatic tests and after recovery. The bleeding of the carbon shall not occur during any of the climatic tests. Oily stains shall to appear on the paper.

## 9 INFORMATION TO BE SUPPLIED BY THE PURCHASER

9.1 The purchaser should supply following information while ordering for teleprinter page rolls:

- a) Number of ply 1, 2, 3 or 4 ( *see* 4.3 );
- b) Outer diameter of the paper roll [ *see* 5.1 (a) ]; and
- c) Dimensions of the centre core [ *see* 5.1 (b) ].

**Table 1 Climatic Tests**

( Clause 8.5 )

Sl No. (1)	Test (2)	Severity (3)	Reference to Indian Standard (4)
i)	Dry heat	+ 55°C for 16 h	Section 3 of IS 9000 ( Part 3 ) : 1977
ii)	Damp heat cyclic ( first cycle )	$40 \pm 1^\circ\text{C}$ at RH not less than 90 percent	Section 2 of IS 9000 ( Part 5 ) : 1981
iii)	Cold	— 25°C for 2 h	Section 3 of IS 9000 ( Part 2 ) : 1977
iv)	Damp heat cyclic ( remaining cycle )	Number of remaining cycles : one ; $40 \pm 1^\circ\text{C}$ at RH not less than 90 percent	Section 2 of IS 9000 ( Part 5 ) : 1981

## ANNEX A

### ( Clause 2.1 )

#### LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
1060 ( Part 1 ) : 1966	Methods of sampling and test for paper and allied products, Part 1	9000 ( Part 2 ) : 1977	tolerance of resistors and capacitors Basic environmental testing procedure for electronic and electrical items : Part 2 Cold test
1060 ( Part 2 ) : 1966	Methods of sampling and test for paper and allied products, Part 2	9000 ( Part 3 ) : 1977	Basic environmental testing procedure for electronic and electrical items : Part 3 Dry heat test
1397 : 1967	Kraft paper ( <i>first revision</i> )	9000 ( Part 5 ) : 1981	Basic environmental testing procedure for electronic and electrical items : Part 5 Damp heat ( cyclic ) test
1648 : 1981	Code of practice for the safety of building ( general ) fire fighting equipment and its maintenance	9055 : 1979	One time carbon paper
4905 : 1968	Methods for random sampling		
8186 : 1976	Marking codes for values and		

## ANNEX B

### ( Clause 8.1.2.1 )

#### SAMPLING AND CRITERIA FOR CONFORMITY

##### B-0 LOT

**B-0.1** In any consignment, all the teleprinter rolls of the same type manufactured by the same factory during the same period, using the same process and materials shall constitute a lot.

**B-0.2** Samples shall be taken from each lot and tested for acceptance tests.

##### B-1 SCALE OF SAMPLING

**B-1.1** The number of page rolls to be selected shall be in accordance with col 1 and 2 of Table 2.

**B-1.1.1** The page rolls shall be selected at random from each lot. For this purpose, provisions for random sampling as given in IS 4905 : 1968 shall be adopted.

##### B-2 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

**B-2.1** The paper rolls selected as specified in col 1 and 2 of Table 2 shall be subjected to

acceptance tests ( *see* 8.1.1.2 ). If a sample roll fails in any one of the acceptance tests, it shall be called a defective. If the number of defective rolls is found to be equal or less than the corresponding permissible number of defectives ( *a* ) specified in col 3 of the table the lot shall be considered as conforming to the acceptance tests; otherwise it shall be rejected.

**Table 2 Scale of Sampling and  
Permissible Number of Defectives**

Lot Size (Number of Rolls in a Lot )	Sample Size	Permissible Number of Defectives
<i>N</i>	<i>n</i>	<i>a</i>
(1)	(2)	(3)
Up to 15	2	0
16 to 50	3	0
51 to 150	5	0
151 to 300	8	0
301 to 500	13	1
501 and above	20	2

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## BUREAU OF INDIAN STANDARDS

### Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002  
Telephones : 331 01 31, 331 13 75

Telegrams : Manaksanstha  
( Common to all Offices )

### Regional Offices :

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg  
NEW DELHI 110002

### Telephone

{ 331 01 31  
{ 331 13 75

Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola  
CALCUTTA 700054

{ 37 84 99, 37 85 61,  
{ 37 86 26, 37 86 62

Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036

{ 53 38 43, 53 16 40,  
{ 53 23 84

Southern : C. I. T. Campus, IV Cross Road, MADRAS 600113

{ 235 02 16, 235 04 42,  
{ 235 15 19, 235 23 15

Western : Manakalaya, E9 MIDC, Marol, Andheri ( East )  
BOMBAY 400093

{ 632 92 95, 632 78 58,  
{ 632 78 91, 632 78 92

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